

WHAT IS CLAIMED:

1. A system for capturing embolic or foreign material in a vessel, comprising:

an elongate tubular member having a proximal end and a distal end;

an elongate wire having a proximal end and a distal end, the elongate wire being positionable within the elongate tubular member;

a capturing structure operatively connected to the elongate wire, having an expanded condition and a contracted position, the capturing structure forming a parachute-like structure in the expanded condition; and

a plurality of inner struts attached to the capturing structure and a plurality of outer struts attached to the capturing structure, the capture device assuming a self folding position in the contracted condition as the outer struts rotate with respect to the inner struts.

2. The system of claim 1, wherein the capture device expands radially with respect to the elongate wire into a generally parachute-like member having a proximal end and a distal end, the proximal end further comprising an orifice or plurality of orifices through which blood can flow.

3. The system of claim 1, wherein the inner and outer struts are configured in an alternating pattern when in an expanded configuration.

4. The system of claim 1, wherein the struts are biased radially outward.

5. The system of claim 1, wherein the inner struts are attached to the elongate tubular member.

6. The system of claim 1, wherein the outer struts are attached to the elongate tubular member.
7. The system of claim 1, the inner struts and the outer struts further comprising nitinol.
8. The system of claim 1, wherein the orifice can be made to contract by retracting the distal end of the elongate wire member with respect to the catheter.
9. The system of claim 1, the inner or outer struts further comprising a slight helix at a proximal end thereof.
10. The system of claim 1, the capturing structure further comprising a semi-permeable membrane.
11. The system of claim 1, the capturing structure comprising a mesh structure.
12. The system of claim 1, the capturing structure further comprising at least one pore that is sized to allow the substantially unimpeded flow of blood therethrough.
13. The system of claim 1, wherein the elongate tubular member is a microcatheter.
14. The system of claim 1, the capturing structure further comprising a knitted structure.
15. A system for capturing embolic or foreign material in a vessel, comprising:

an elongate tubular member having a proximal end and a distal end;
an elongate wire having a proximal end and a distal end, the elongate wire being positionable within the elongate tubular member;
a capturing structure operatively connected to the elongate wire having an expanded condition and a contracted position, the capturing structure forming a parachute-like structure in the expanded condition;
a plurality of first struts having proximal ends and distal ends, the distal ends being attached to the capturing structure and the proximal ends being attached to the elongated wire; and
a plurality of second struts having proximal ends and distal ends, the distal ends being attached to the capturing structure and the proximal ends being attached to the elongated wire, the proximal ends including a partial helix configuration.

16. The system of claim 15, wherein the capturing structure assumes a folded position in the contracted condition.

17. The system of claim 15, wherein the capture device expands radially with respect to the elongate wire into a generally parachute-like member having a proximal end and a distal end, wherein the proximal end is defined by an orifice through which blood can flow.

18. The system of claim 15, wherein the plurality of first struts and second struts are biased radially outward.

19. The system of claim 15, wherein the orifice can be made to close by retracting the distal end of the elongate wire member proximally, refolding the capture device and reducing the profile for an atraumatic retraction of the device.

20. The system of claim 15, the capturing structure comprising a mesh structure.
21. The system of claim 15, the capturing structure comprising a membrane.
22. The system of claim 15, wherein the capturing structure has at least one pore that is sized to allow the substantially unimpeded flow of blood therethrough.